

# PATENT SPECIFICATION

DRAWINGS ATTACHED

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## COMPLETE SPECIFICATION

### Improvements relating to casings for Motor Compressors

We, LICENTIA PATENT-VERWALTUNGS-G.M.B.H., a German Company having its registered office at Frankfurt (Main), Theodor-Stern-Kai 1, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to casings for motor compressors such as are used, for example, in compression refrigerators.

One of the most important problems encountered when designing a casing for a motor compressor is that of reducing the noise transmitted by the casing. The top-part of the casing in particular tends to act as an effective sound-radiator for noise produced by the motor compressor and for vibrations at the natural frequencies of the casing.

In an effort to reduce the radiation of noise it has been proposed to make up the casing from cast metal parts with thick walls, but this requires an uneconomical amount of material. Other proposals have been made which consist in welding or soldering to a casing of sheet metal, stiffening plates intended to attenuate the natural vibrations of the casing. It has also been proposed to design the casing with double walls having an intermediary space filled with a liquid such as oil or refrigerating medium, thereby to damp the vibrations of the casing. However, all the above proposals are disadvantageous in that they complicate the construction of the casing and increase the cost of manufacture.

It is an object of the present invention to provide a motor compressor with a casing of relatively simple construction which in some measure reduces the radiation of noise.

According to the invention at least the top-part of such casing is constituted by two or more contiguous metal laminae in contact

over substantially the whole of their facing surfaces.

The contiguous laminae can be shaped and interfitting and to this end the laminae can be shaped together from sheet metal in one working operation. Preferably they are of substantially equal thickness, but they may be of different thickness and may be of different metals, provided the total thickness gives the required strength.

The whole of the casing may be laminated in accordance with the invention, but usually only the top-part of the casing need have the laminated construction, because experience shows that noise emanates mostly from the top-part of the casing, particularly where the bottom part is damped by oil in a sump at the bottom of the casing.

In order that the nature of the invention may be more fully understood, an embodiment thereof will now be described by way of example, with reference to the accompanying drawing, in which the single somewhat schematic Figure shows a side view, of a motor compressor having a casing in accordance with the invention.

Referring to the drawing, 1 designates the bottom part of a casing in which a motor compressor 3 is resiliently mounted. The top-part 2 of the casing consists of two snugly interfitting shaped metal laminae 2a and 2b formed, for example, from respective sheets of metal shaped together in one working operation. The laminae 2a and 2b are not positively connected together except insofar as may be necessary to secure the top-part 2 to the bottom part 1. The bottom-part 1 of the casing also forms an oil sump 4. The laminae 2a and 2b are shown as being substantially of equal thickness, as is preferred, but they need not be and neither need they be of the same metal. Radiation of noise is reduced because the laminae 2a and 2b will have different natural frequencies of vibration and in consequence of their over-

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all surface contact with each other they will tend to have a mutual damping effect on the formation of vibrations.

WHAT WE CLAIM IS:—

- 5 1. A motor compressor having a casing of which at least the top-part of the casing is constituted by two or more contiguous metal laminae in contact over substantially the whole of their facing surfaces.
- 10 2. A motor compressor as claimed in Claim 1, in which such contiguous laminae are shaped to fit within one another.
- 15 3. A motor compressor as claimed in Claim 2, wherein said interfitted laminae are formed together by a single operation.
4. A motor compressor as claimed in Claim

1, Claim 2 or Claim 3, in which such contiguous laminae are of substantially equal thickness.

5. A motor compressor as claimed in Claim 1, Claim 2 or Claim 3, in which such contiguous laminae are of different thickness. 20

6. A motor compressor as claimed in any preceding Claim in which such contiguous laminae are of different metals. 25

7. A motor compressor having a casing substantially as hereinbefore described with reference to the accompanying drawing.

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COMPLETE SPECIFICATION

1 SHEET

*This drawing is a reproduction of  
the Original on a reduced scale*

